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United States Department of Agriculture | Forest Service | Manti-LaSal National Forest | 599 West Price River Dr. Price, Utah 84501

Reply to: 2820

Date: March 9, 1990

Pam Grubaugh-Littig, Permit Supervisor
Utah Division of Oil, Gas, and Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

RE: Addition of Federal Coal Lease U-024316, Permit Application Package (PAP), Co-op Mining Company, Bear Canyon Mine, Act/015/025, Folder #2 - Completeness Review by the U.S. Forest Service as the Federal Land Management Agency under 30 CFR Subchapter D.

Dear Mrs. Grubaugh-Littig:

The following are our review comments on the PAP as it pertains to lands administered by the Manti-LaSal National Forest. We feel the document is inadequate in its present form, and major revisions are needed before we can consent. Comments are packaged in general categories; references to the PAP volume, section, and page are given unless the comment is general.

ARCHAEOLOGY

Section 1.2 page 1.7:

The statement "No sites warranting preservation are located within the permit boundaries", as it pertains to Federal Coal Lease U-024316 is without foundation because no surveys have, to our knowledge, been conducted on this lease. While this lease can generally be considered to have low probability for cultural resources, there is some potential for cultural resources to exist along the ridgeline near the middle of the lease area, based on existing survey data for other areas. Consequently, a cultural resource inventory of the ridge area is needed.

OWNERSHIP AND LEASE DESCRIPTION

Appendix 3-C, Lease Addition, page 3C-3:

The description of lands to be added to the plan should show Federal Coal Lease U-024316 which lies in the NE1/4, E1/2NW1/4 Section 14 and W1/2W1/2 Section 13. The present description only includes the SE1/4 Section 14 which isn't even on the Federal Coal Lease.

Section 2.2.2, page 2-3:

Lease U-024316 fits the legal description shown for U-024318, according to the BLM coal plat for T 16 S, R 7 E.

Federal Coal Leases, Appendix 2-F

Include a copy of Federal Coal Lease U024316. Only the assignments are shown.

GEOLOGY

Slope Stability, Appendix 3-F and Lease Addition, Appendix 3C-5:

Bear Canyon is known for unstable slopes. Mains are proposed under the west escarpment of Bear Canyon on Federal Coal Lease U-024316. This escarpment lies within the Bear Canyon fault zone which trends parallel to the escarpment. In order to adequately assess the impacts of mining in this area, a discussion of slope instability and its relationship to the Bear Creek fault zone is necessary, especially if any recovery mining is proposed.

LEASE ADDITION, Appendix 3-C:

The predominant joint patterns in Federal Coal Lease U-024316 need to be shown in the PAP. Of particular concern is the relationship of joint patterns to slope instability in Bear Canyon, especially within the Castlegate Sandstone.

HYDROLOGY

Section 5.2, page 3C-15:

What is the basis for stating that the Castlegate Sandstone does not serve as even a partially saturated acquifer? It is stated on page 3C-13 that water percolates downward and laterally along joints and emerges as random springs. This suggests partially saturated conditions within the jointed areas. What are acquifer characteristics of the surface formations within Federal Coal Lease U-024316? What is the potential for dewatering of the surface by subsidence induced fracturing?

LEASE ADDITION, Appendix 3-C, page 3C-8:

Ground water discussion is limited to the SE1/4 of Section 14. Lease U024316 includes NE1/4, E1/2 NW1/4 Sec 14 and W1/2 W1/2 Sec 13. The SE1/4 of Section 14 is not part of this lease.

LEASE ADDITION, Appendix 3-C, page 3C-20:

The last sentence of the first paragraph on page 3C-20 appears to be an incomplete sentence. What is meant here?

APPENDIX 7-F:

Appendix 7-F (Computer Size Runs) is not legible and cannot be adequately reviewed.

PROBABLE HYDROLOGIC CONSEQUENCES DETERMINATION (PHCD), Combined Mining Effects, 7-J16:

D.2.b and c state that water lost at one source will likely emerge at another location. What will be the effect on water uses tied to the locations or springs from which water is lost?

PHCD, 7-J11:

In paragraph 3 of page 7-J11, if impacts are only minimized, then there must be some impact. What is the extent of the impact?

CUMULATIVE HYDROLOGIC IMPACT ASSESSMENT (CHIA), 7-L17:

In part V. of the CHIA, where is the referenced Table 1?

APPENDIX 7:

Many pages are not legible. References are not correct or not present. Page numbers do not agree with the table of contents. Maps are not present or are out of place. The report is incomplete and cannot be reviewed in present form.

APPENDIX 7-F:

The value for a 25 yr 24 hr storm recurrence should be 2.8 ins. See Spencer & Kelly, 1984, Hydrologic Inventory and Analysis for the Huntington Creek Watershed, Vol. 3, Manti-LaSal National Forest, pages 7-402.

APPENDIX 7-F:

What is the source of the data in "Hiawatha Rainfall Data Base - Rainfall Intensity (inches/Hours)"?

CHIA, 7L-1:

The Gentry Mountain CHIA is a new report, but it does very little to address effects of the Bear Creek Mine. The CHIA should address the effects of mining on existing water uses and downstream water uses

CHIA, 7L-11 & 13:

Where is figure 4 referenced in Part IV of the CHIA?

CHIA, 7L-13:

Where are the springs described in Paragraph 6, page 7L-13 (CHIA pg 9)? What is the source for the number of springs referenced?

CHIA, 7L-10:

What is the status of reclamation at the Trail Canyon Mine and why?

CHIA, 7L-14:

What is the significance of '(1)' related to Serviceberry Creek Drainage?

CHIA, 7L-21, Paragraph 2:

Evaporation is limited to shallow depths, less than 4 feet. Once water percolates below the routing depth, evaporation is negligible.

CHIA, 7L-20:

The CHIA fails to describe the importance of springs to users.

CHIA, 7L-14:

Where are Figure 5 and Table 1?

LEASE ADDITION, 3C-12:

Plate 7-4 needs to show the ground and surface water features of Federal Coal Lease U-024316.

OPERATION AND RECLAMATION PLAN, 3.5.3, 3-41; RENEWABLE RESOURCES, 3H-6:

What are the potential subsidence impacts to the stream in Mc Cadden Hollow within Federal Coal Lease U-024316, and what measures will be used to protect the hydrologic balance of this stream?

PHCD, 7-J10:

What is TDS from mine water discharge?

PHCD, 7-J13:

What is the impact to Birch Spring?

PHCD, 7-J11:

In paragraph 3 of page 7-J11, if impacts are only minimized, then there must be some impact. What is the extent of the impact?

PHCD, 7-J10:

What is the hazard of other chemicals being released from the mine operation?

PHCD, 7-J7:

Referenced section 7.2.5.2.5 was not found.

PHCD, 7-J16:

Referenced Sections 111.A.2 and III.B.2 were not found.

SMALL AREA EXEMPTION, 7K-3:

On page 7k-3, the statement "establishment of vegetation will reduce the quality and improve the quality of any run off" needs to be corrected.

LEASE ADDITION 3-C, 3C 8-23:

This section generally does a good job of discussing ground water conditions, but ignores surface water hydrology. The lack of discussion of Mc Cadden Hollow, in Federal Coal Lease U-024316, is of particular concern.

SURFACE WATER 3.6.33, 3-71:

What is the horizontal drainage pattern?

OPERATION AND RECLAMATION PLAN 3.4.2.3, 3-18:

What is the relationship of the 'sediment ponds' to Bear Canyon and how can they control sediment? Do they divert the flow in Bear Canyon?

LIFE OF MINE

INTRODUCTION, 1.1, 1-5:

Where is mining planned north of the Federal Coal Lease U-024316? How would the coal be accessed? Would pulling mains, as proposed, cut off this access? What outcrops are referred to in the statement "Reserves to the North can be entered through outcrops", and where are these outcrops located?

RENEWABLE RESOURCES 3H-8:

Is any longwall mining proposed for this mine.

MONITORING

LEASE ADDITION, 3C-4 & 28:

The addition of only one new subsidence monitoring station is inadequate for Federal Coal Lease U-024316.

OPERATION AND RECLAMATION PLAN, 3.5.5.3, 3-49:

The effects of subsidence on surface vegetation with Federal Coal Lease U-024316 needs to be monitored. See comments on subsidence effects and vegetation.

OPERATION AND RECLAMATION PLAN, 3.6.5.6, 3-84:

Where is the subsidence monitoring plan for Federal Coal Lease U-024316? No specifics are given in this section, other than the proposal for one new subsidence monitoring point to establish the entire system.

RENEWABLE RESOURCES, 3H-9:

Field investigations of escarpment areas need to be made regularly when mining in those areas.

RENEWABLE RESOURCES, 3H-11:

If escarpment failure is occurring, mining must stop immediately in the affected area. This can only be done if the failure is seen through effective monitoring.

MC CADDEN HOLLOW:

The stream in Mc Cadden Hollow within Federal Coal Lease U-024316 should be monitored for flow once a month from May through September.

VEGETATION MONITORING:

Vegetative monitoring needs to be conducted at 5-year intervals corresponding with mine plan renewals. The monitoring must be adequate to detect any broad vegetative community changes caused by mining. Color infrared aerial photography is probably the most cost effective method.

RECLAMATION

OPERATION AND RECLAMATION PLAN, 3.6, 3-60:

What is the proposed reclamation or abandonment procedures for workings under Mc Cadden Hollow?

ROADS

OPERATION AND RECLAMATION PLAN, 3.4.2.4, 3-19:

Two 4X4 roads, listed in our Forest Transportation Inventory System as road numbers 53028 and 53029, lie above proposed workings on Federal Coal Lease U-024316. These roads provide access to private property. In coordination with land owners who use these roads, the Manti-LaSal National Forest will be determining whether these roads will be retained or obliterated. These roads should be mentioned in the plan.

SOILS

Soil information for the mine plan is very good for the existing mine area. There is nothing presented for the proposed lease addition (U-024316). The area in the southeast corner of Section 13 is very steep

and unstable. If this area is not protected from subsidence, the soils could be affected by mass failure and headcutting which would reduce land productivity and add sediment to Bear Creek and Huntington Creek.

SUBSIDENCE EFFECTS

INTRODUCTION, 1.1, 1-1:

What is the basis for stating that subsidence will only cause minor and easily repairable damage?

INTRODUCTION, 1.2, 1-6:

The general statement about environmental impacts to vegetation does not consider the potential effects of subsidence, especially escarpment failure.

INTRODUCTION, 1.2, 1-10:

Stating that no man made structures will be damaged due to topography and inaccessibility of the lease ignores two 4X4 roads which cross National Forest System Lands on Federal Coal Lease U-024316.

INTRODUCTION, 1.1, 1-5; OPERATION AND RECLAMATION PLAN 3.4.2.2, 3-18:

What is the basis for stating that a 100-foot barrier pillar will maintain stability of the surface? We are particularly concerned that a 100 foot barrier pillar in burned coal will provide inadequate support.

INTRODUCTION 1.2, 1-9:

Stating that Huntington Creek is unlikely to be affected by sediment or subsidence does not consider the potential for escarpment failure and increased erosion in Bear Canyon, a major tributary of Huntington Canyon.

LEASE ADDITION 3C-5:

The potential for dewatering from subsidence has been ignored but needs to be addressed.

LEASE ADDITION, 3C-21:

What is the geotechnical basis projecting only .5 to 1 foot of post mining subsidence? In a room and pillar mine, complete subsidence may take years.

OPERATION AND RECLAMATION PLAN 3.4.1.2, 3-15:

The plan states that the sub-mains will be pulled upon final retreat of the mine operation. Will the mains in Bear Canyon be pulled? Will this cut off access to coal to the north?

If the mains in Bear Canyon are pulled, could this trigger escarpment failure? What would be the geotechnical basis for such a determination. What geotechnical data is available?

OPERATION AND RECLAMATION PLAN 3.4.2, 3-17; 3.4.1.2, 3-15:

What is the safety factor of the barrier pillars, burned, and unburned and is it sufficient to prevent escarpment failure?

OPERATION AND RECLAMATION PLAN 3.4.2.3, 3-18:

Should escarpment failure occur, would it accelerate the erosion processes and would it diminish downstream water quality? What would be the basis of such a determination?

OPERATION AND RECLAMATION PLAN 3.5.3.1, 3-44:

The proposed mitigation measures for providing alternative water sources would be of little value in the event of subsidence induced damage to the creek in Mc Cadden Hollow.

SECTION 3.5.2.2, 3-41:

The only control measure stated to mitigate impacts to surface resources is to contact UDOGM in case of slides. This is inadequate. In addition to the requirements discussed under Monitoring, the Price District Ranger must be contacted should landslides or other mass failures occur within Federal Coal Lease U-024316.

PHCD, 7-J15:

Page 7-J15 states that no upland stability problems are anticipated as a result of mining and reclamation. This statement does not consider the potential for escarpment failure in Bear Canyon.

RENEWABLE RESOURCE, 3H-7:

What subsidence protection measures could be applied at the outcrop once resouces are negatively impacted? We favor adequate geotechnical design to prevent escarpment failure.

RENEWABLE RESOURCES, 3H-7:

What is the formula used to calculate maximum subsidence?

VEGETATION

VEGETATION 9-A, 9A-6:

What plant is Gualacum sanctum?

VEGETATION 9.5.5, 9-21 & 22:

The seed mix is expensive, yet it is not well suited for the area.

WILDLIFE

Escarpment failure has the following impact on fish and wildlife: increased sedimentation, disturbance to big-game winter range, and loss of raptor nests (especially Golden Eagles).

Escarpment failure has the potential to impact big game by blocking migration routes and destroying vegetation. Although blocking of migration routes is not likely, escarpment failure has been shown to greatly reduce forage available to big-game.

WILDLIFE 10-22:

Disturbances related to escarpment failure could impact macro invertebrate populations in Bear Creek Canyons. These macros invertebrates are part of the food base for fish in Huntington Creek.

WILDLIFE 10B-4:

Statements regarding precautions taken to prevent sedimentation problems ignore the potential for escarpment failure.

OPERATION AND RECLAMATION PLAN 3.5.6.1, 3-53:

What aquatic wildlife occurs in Mc Cadden Hollow and what are the projected impacts due to subsidence?

WILDLIFE 10-26:

It has not been established that 100-foot barrier pillars are adequate to safeguard raptor nests. To adequately protect raptors it is necessary to know where they are. Therefore, the company must develop an inventory of existing nests and keep it updated.

WILDLIFE 10B-5:

Reclamation of areas disturbed by escarpment failure would be difficult and often takes several years for success.

WILDLIFE 10-25:

According to State and Federal law the Utah Division of Wildlife Resources and the United States Fish and Wildlife Service must be contacted, and permits obtained if there is the potential that raptor nests may be impacted.

Sincerely,

James L Horne

for
GEORGE A. MORRIS
Forest Supervisor